Learning Management System as A Tool to Achieve 21st Century Skills in Teaching and Learning Process in Indonesia School Context

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ABSTRACT

This paper is a conceptual review which discusses the previous literatures employing LMS for the effectiveness of teaching and learning activities in the classroom. Despite the success stories of the implementation of this web-based platform in the academic context, there was few studies highlight the mechanism of using LMS for the classroom management to accommodate effective face to face and online learning for a specific term. Several studies about employing LMS in the classroom were reviewed to obtain the forthcoming proposal of classroom activities using LMS. The review results the elaboration of recent LMS is provided as well as the advantages of using LMS to achieve the 21st century skills are described. Preparation of LMS for teaching and learning activities in the classroom including the learning goals, planning for both face to face and online learning, the current Bloom Taxonomy, selecting online tools, and the evaluation are interpreted to establish future classroom activities.

Keywords: learning management system, 21st century skills, school education, e-learning

INTRODUCTION

Learning Management System (LMS) has been acknowledged and studied among teachers and education practitioners in Indonesia (Fauzi, 2017; Yanti, et al., 2017; Pupung, at al., 2016; Tambunan, 2015; Monalisa & Havid, 2013). Despite the fact that its acronym is not casually used among Indonesian scholars, the implementation of LMS in many modes of English teaching and learning activities received significance contribution both from teachers and students' point of views. One of the well-known LMS platforms that renowned to be studied and implemented in Indonesia school context is Edmodo. Edmodo significantly changed the achievements of students in terms of writing skills in various genres (Fauzi, 2017; Monalisa & Havid, 2013). Additionally, high motivation to learn the subject matter is gained, as well as, this LMS can surpass other teaching strategies, such as picture stories (Hastomo, 2016). Edmodo not only brought the effectiveness of teaching and learning some English skills but also assisted both teachers and students' attitudes to interpret teaching and learning process.

Despite the success of teaching English skills using Edmodo mentioned in the previous literatures, very few studies have investigated the learning and course management aspects used in LMS, specifically in school context in Indonesia. The mechanism by which the process of online communication, discussion activities, grading and blended delivery content and design for a specific term or one academic year have not been established. Even, several teachers who used LMS in the classrooms seemed do not exploit too much on its features offered (Gumawang, 2013). In addition, a key problem with much of the literature on using LMS is that they did not describe on how the process of teaching the skills in advance of the students acquiring the knowledge. Consequently, the implementation of using LMS in

constructing the knowledge during a specific term is somewhat obscure and, in fact, not systematically investigated.

LMS USED IN SCHOOL CONTEXT

LMS has been widely used in education sectors, especially in school context. However, employing LMS does not merely about transferring the materials of face to face meetings into virtual platform. Based on Saliba, at al. (2013), there are several things that should be considered by teachers in employing LMS in the classroom. Firstly, the role of the physical space should be clear when using online platform or LMS. Secondly, planning and creating class content is very crucial since the teachers should divide which one is the best to be included in face to face meetings and LMS. Next, using LMS need to consider the form of students' collaboration and communications. After that, providing feedback should be incorporated in both face to face and LMS modes. Then, the important of class participation and class attendance should be emphasized in both forms of face to face and LMS fashion. Lastly, teachers need to provide extra help for students both on time (synchronous) and outside the school schedule (asynchronous).

Based on several literatures that had been gathered, the writers found that there were too many studies emphasized on how the researchers conducted the study and the content or classrooms managements that exploited LMS. It is explored excessively that the concepts of how LMS should be implemented in the classroom, for example describing the ways of creating the content materials, the procedure of using the LMS, and the elaboration of class activities combining with LMS (Kurniawati & Djunaidi, 2014; Tanduklangi, A. Lio, & Alberth, 2019; Yusuf, et al., 2018; Rahmah & Chakim, 2016). Meanwhile, several studies focused on the research methodology in exploiting LMS in the study (Monalisa & Ardi, 2013; Hastomo, 2016; Noviana, 2015). They described the mechanism on conducting the research and provide evidences on how LMS significantly impacted to the teachers and students' behaviors in depth, yet LMS aspects that influenced them were minor to be explored. In addition, most studies mentioned above are overmuch in investigating the aspect of transferring the content materials. The LMS aspects that can contribute to the efficient teaching and learning activities, such as content management, outside-class assistance, virtual testing and assessment, virtual students' performance report were rarely discussed in the studies.

From the literatures found, it is worth noting that the teachers still require expanding their competences in using LMS. The practice of blended learning which make use of both face to face and virtual learning should accentuate students' interactions (Geer, 2019). Students can perform individual, pair, and group-works from the learning modes. Moreover, LMS should be focused not only in the way of delivering the content but also in the administration of the class, such as class content management and evaluation.

UNDERSTANDING THE MECHANISM OF LMS
AS A TOOL TO ACHIEVE 21ST CENTURY SKILLS

In demand of the future projections of complex global challenges, a new model of learning has been emerged, called the twenty first century skills. These skills demand the students to achieve complex competencies to experience and survive in the future. Scott (2015) mentioned that the skills of effective communication, innovative, problem solving through negotiation and collaboration, as well as critical thinking are called for to be developed by the students. All of these skills need a process to be comprehended by the students and employ deep learning and understanding which include personalized learning strategies, collaborative learning, and informal learning (Scott, 2015).

The twenty first century learning model brings the technology as the part of learning exploration since it allows students to experience the real-world across contents which belong to the implementation of deep learning (Saavedra & Opfer, 2012). Technology nowadays is able to assist the students to achieve personalized, collaborative, and informal learning. Its presence will help students to gain high-order thinking skill Additionally, the assessment of 21st century skills needs a balance digital literacy for example technology mastery, formative and summative assessments that measure student understanding of 21st century skills. Thus, there is interrelationship between the implementation of technology in the process of acquiring these skills.

Learning Management System (LMS) is one of the web-based platforms that offers the users to manage their face to face into online teaching and learning. LMS facilitates delivering, tracking, and managing the process of teaching and learning (Lonn, 2009). According to Oliveira, et al. (2016), LMS automatically create administrations of the course for example users, course, and learning process recordings, students' participation, and learning course reports. It facilitates synchronous and asynchronous learning, gradebook administration, mobile learning, skills tracking, social learning, student portal, testing/assessment, even video conferencing. Besides, most of them are without charge.

In the case of personalized learning, recent LMS provides the opportunity for the students to have their flexibility in organizing their learning. LMS can be a tool for learner centered approach that makes use other online tools to collaborate with the students' learning behavior (Oliveira, et al., 2016); Kesim & Hakan, 2013). LMS contributes to the availability of the content materials set up with there is no limitation for the students to access in which in face to face learning becomes one of the weaknesses. The students can learn in their own pace and gain the deep learning of the content materials along with accessing other online references to support the understanding of the knowledge concepts.

Moreover, LMS is built up with the feature for engagement collaborative learning. Recent development of LMS accommodates the teacher to assess and grade students' collaborative activities (Oliveira, et al., 2016). The teacher can provide immediate and prompt feedback along with grading the students' works. Also, the abundant features to support the collaboration, for example linking to other sources, pictures, videos or materials that are not brought by the main course content can be added. As well as, the way of the students participating in the collaborative works, whether by using text, voice-recording, or even video-recording.

LMS provides countless teaching and learning styles that support teachers and students' behaviors. It supports the factors of deep learning that includes personalized learning, collaborative learning, as well as informal learning. LMS can be a forum as the central of learning management, which its content materials can be supported from various sources and media. This latest web-based platform is able to be a medium to develop 21st century skills of the students.

PREPARING LMS FOR EFFECTIVE TEACHING AND LEARNING ACTIVITIES IN THE CLASSROOM

Considering using LMS for teaching and learning activities in the classroom for a specific term or one academic year need detailed planning and preparation. An effective LMS is not about the kinds of LMS that will be chosen, since most LMS shares same features; however, it is about a careful planning in setting the goals of learning and tools outside of the LMS. This selection of the tools should be discriminating in order to build effective engagement to the students and support their understanding to accomplish the learning goals (Oliveira, et al., 2016).

UNDERSTANDING AND SETTING UP THE LEARNING GOALS

Since the transfer of the content materials is conducted in both face to face and online learning modes, there should be a distinction of the roles from both modes (Saliba, et al., 2013). This distinction can be referred to the detailed planning and understanding, as well as assessing the learning goals. The learning goals should include a clear description of activities and how the teacher will assess the activities (Garrison, 2011). A prominent attention to the modes of both face to face and online in interpreting the learning goals into action should also made distinctive.

HAVING A WELL-PLANNED BOTH ONLINE AND FACE TO FACE LEARNING

As learning goals are well-interpreted, careful plan of online and face to face learning should also be acknowledged. The understanding of online tools offered in LMS can be a prior view before determining the face to face activities (Oliveira, et al., 2016). Teacher can decide which of the paramount collaborative activities tools that can be accommodated in online learning. These tools can be the discussion forum, video conferencing, chats, or even workshops. The other point that needs to be scrutinized in planning online and face to face learning is the duration of learning, tasks and projects. Teacher should consider differentiating the materials that need to be accomplished by the students whether in a long duration or in a short time.

CONSIDERING TO EMPLOY BOTH BLOOM TAXONOMY AND DIGITAL BLOOM TAXONOMY

Bloom Taxonomy action verbs are employed to make the learning goals can be observed and assessed. The new version of Bloom Taxonomy includes the list of action verbs associates with the internet and technology in the modern classroom (Watanabe-Crockett, 2015). The taxonomy components are remained the same; Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating. However, various digital verbs are used in Digital Bloom Taxonomy, for example 'Googling' in Remembering, 'Tagging' in Understanding, 'Charting' in Applying, 'Advertising' in Analyzing, 'Debating' in Evaluating, and 'Filming' in Creating. According to Weldock & Growe (2017), the implementation of combination both the Bloom Taxonomy and Digital Bloom Taxonomy can help the teacher to portray the activities in face to face and online learning. Thus, teachers can carefully select the technology tools that are appropriate to the goals and topics of the subject.

SELECTING THE TOOLS THAT SUPPORT ONLINE LEARNING

To fulfill the function of LMS as student-centered learning, it should be supported with the tools outside the platform. LMS course contents are commonly uploaded by the teachers and it should be an assistance by the other tools or applications outside the platform in order to make online learning not to close teacher-centered nature (Saliba, et al., 2013). Teachers need to acknowledge the prominent applications that can serve the students with personalized learning. To a certain degree, teachers should understand the technology tools according to the classification of its features. To acquire information, teachers can employ some technology tools, namely Google Hangouts, Kahoot!, or Skype. Also, teachers are able to make use of Seesaw, Padlet, and Evernote to help students make meaning in the learning process. In addition, technology tools can be exploited for transferring knowledge. The tools, such as Powtoon, Prezi, and Piktochart, promote the experience for teachers to deliver the subject content in engaging and interactive ways (Schwartz, 2015). All of the technology tools have

been mentioned can be linked and attached to LMS and the students can utilize these tools to experience personalized learning and informal learning.

EVALUATING THE EFFECTIVENESS OF THE LEARNING

The successful of teaching and learning both face to face and online should be seen from the performance of the students' outcome whether the outcome has reached the learning goals or not (Saliba, et al., 2013). This outcome can be seen from the results of students' summative and formative assessment conducted in both face to face and online learning. Besides, students' activities and attendance can be as indicators to perform students' outcome (Trowler, 2010). LMS has the feature to record students' performance in learning, tasks, quiz, discussion, and assignments that make use the teacher to conclude their course outcomes (Oliveira, et al., 2016).

In addition, an effective use of E-learning platforms in the classroom needs positive attitudes from the students seeing from their satisfaction exploiting the tools. The measurement tool, such a self-report questionnaire from the students, will yield the personal experience in joining the course which is able to perceive the quality of the teaching, as well as providing information to the teachers about the students' perceptions of the ease of use of the technology and the online content given in the learning (Shee & Wang, 2008).

Lastly, in supporting 21st century skills, the evaluation of E-learning platforms use should measure the student engagement. Engagement needs feelings and sense-making in the learning process that involves participation in classroom activities (Trowler, 2010). It can be measured from 3 aspects; behavioral, emotional, and cognitive, which the responses can be indicated in three forms, whether the students have positive, negative, or non-engagement. Student engagement can be evaluated by using questionnaires. Interview is able to be conducted to gain the students' perception in depth.

CONCLUSION

The development of recent LMS as one of the web-based platform to manage teaching and learning activities in the classroom should be more optimized by Indonesian teachers. Learning Management System carried out in the past studies only excessively focus on specific English skills and topics. Current LMS offers more advanced features that support 21st century skills including the process of deep learning which make use of personalized learning, collaborative learning, and informal learning. LMS should be utilized to make the teaching and learning activities in face to face mode conducted effectively through the expansion of online learning process. The effectiveness can be gained by acknowledging the learning goals, having a well-planned learning in face to face and online modes, employing Digital Taxonomy Bloom, and evaluating the learning. Also, teachers can engage the teaching and learning activities through technology approach by using careful selection of tools and online materials that follows current phenomena of the emergence of technology and internet.

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